



Alaska Highway Gas Pipeline Project

MAR 4 1982

FOOTHILLS PIPE LINES (YUKON) LTD.

ALASKA HIGHWAY GAS PIPELINE PROJECT

COMMUNITY INFORMATION PROGRAM

GEOTECHNICAL DRILLING PROGRAM (LAND BASED)

GEOTECHNICAL INVESTIGATION - KLUANE LAKE

Winter 1982

Community Relations

February, 1982

March 4/82

To: Free

Foothills Pipe Lines

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Foothills Pipe Lines (South Yukon) Ltd.

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FOOTHILLS PIPE LINES (YUKON) LTD.

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1.0 Introduction

During the first quarter of 1982 Foothills Pipe Lines (Yukon) Ltd. plans to carry out two geotechnical engineering programs in Yukon. Both programs are required for mainline design purposes.

The first, a land drilling program is set to begin February 5, 1982 and will be completed by March 15, 1982.

The second program involves an intensive geotechnical examination of the proposed Kluane Lake crossing. The program is to be carried out on the ice with mobilization February 14, 1982. Completion date is March 17, 1982.

2.0 Program Description

2.1 Geotechnical Drilling Program (Land Based)

The objective of this winter's land based drilling program is:

- a) to further delineate the extent of ice rich soils (permafrost) along the pipeline right-of-way; and
- b) to determine the existence and extent of unfrozen ground along the pipeline right-of-way.

2.2 Method

- a) Approximately 60 drill holes are planned with selected holes to be instrumented.
- b) Most of the drill holes will be located in Sections 4, 5, 6 and 8. A very few drill holes are contemplated for other Sections of the right-of-way.
- c) Two drill rigs are to be used. Midnight Sun Drilling Company Ltd. of Whitehorse is supplying a C.M.E. drill. Beck Construction of Calgary is supplying a Nodwell mounted Becker Hammer Drill.

2.3 Geotechnical Investigation - Kluane Lake

The objective of this winter's program on Kluane Lake is to determine engineering behaviour of side slopes and bottom of Kluane Lake under earthquake conditions. Mobilization is February 14, 1982.

2.4 Method

- a) Ertec from Los Angeles will provide a 20 ton twin axle truck equipped with electric cone penetrometer. Ertec is responsible for single shift operation of the cone penetrometer, interpretation of results and preparation of a report of findings. Simply put, a cone penetrometer is a steel rod that is pushed into the lake bottom. It measures very precisely the physical resistance of the soil as it is inserted on both a lateral and vertical axis. From there it is a relatively straight forward mathematical calculation to predict such things as slope stability and shear strength of the soil under a variety of seismic conditions.
- b) Foundex Explorations of Vancouver will provide drilling, sampling and casing placement services for the operation. This includes a Simcoe 2800 drill enclosed in a 44 foot by 12 foot plywood sled mounted sled.
- c) Robinson, Dames & Moore are to provide a site technician to recover drill samples and look after borehole logging, sample shipment, analyses of all geotechnical data including lab testing in San Francisco and preparation of an engineering report.

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